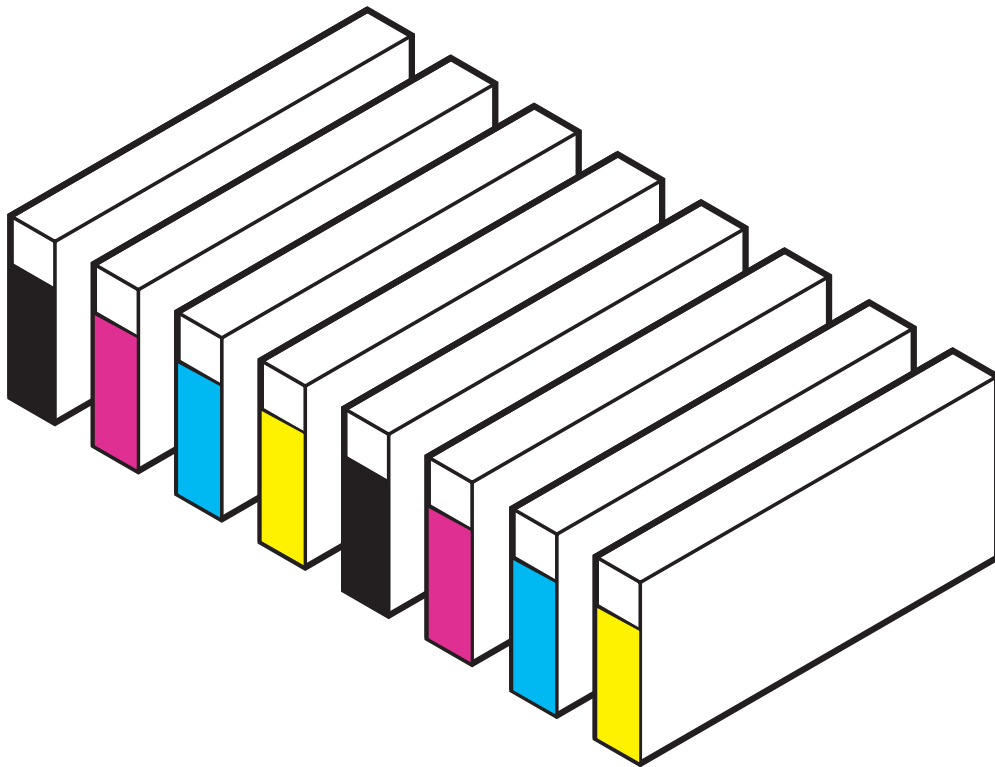


## Textile Ink-Use Guidance



This Ink-Use Guidance describes the fabric pre and post treatment when using Mimaki textile ink with Mimaki printer. Please read this Ink-Use Guidance and fully understand the ink printing process and safety precaution to make the most effective use of the printer and dye ink.

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## **CAUTION**

- 1. When moving the printer, remove the ink cartridge from the printer.**
- 2. Do not remove an used ink cartridge until a new one is set in.**
- 3. Be sure to replace an ink cartridge when the operation of head and carriage are stopped.**
- 4. Keep ink cartridges away from children.**
- 5. Be sure not to store ink cartridges under high temperature and freezing conditions.**

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# 1. First aid treatment

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## 1. First aid treatment

When the ink remains on the skin or in your eyes, immediately administer following first aid and consult a doctor accordingly.

### **If on skin:**

- Wipe off any residual ink with a lint-free cloth.
- Then wash off any residual ink with soap.

### **If in eyes:**

- Immediately wash your eyes out with a lot of clean water for at least 10 minutes.
- If anything abnormal is detected, consult a doctor as soon as possible.

### **If swallowed:**

- Wash your mouth out to leave any residual ink with clean water.
- Wash your mouth out with a lot of clean water to reduce swallowed ink.
- If anything abnormal is detected, consult a doctor as soon as possible.

### **Inhalation:**

- When using dye ink, be careful not to suck up dye ink if you have bronchial infection.
- Perform the operation in an airy work place.
- If anything abnormal is detected, immediately stop using dye ink and consult a doctor.

## 2. Printable fabric and ink type

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### 2. Printable fabric and ink type

Following table shows printable ink type and fabric materials.

Type	Model	Fabric
Acid dye ink	SPC-0355xx series	Silk
Reactive dye ink	SPC-0357xx series	Cotton
Disperse dye ink	SPC-0356xx series	Polyester
Pigment ink for Textile	SPC-0350K, M,C SPC-0435Y	Cotton (T-shirt)
Discharge liquid	SPC-0409	Fabric for reactive dye ink (cotton)



- **When exchanging ink type of the printer, refer to the operation manual attached to the printer.**
- **Usable ink type differs depend on the printer, therefore, not all the above ink types are available. Confirm the usable ink types with operation manual.**
- **Be sure to store in a cool and dark place.  
Proper ink storage temperature is 0 to 30°C in range.  
Do not freeze disperse dye ink and textile pigment ink.**
- **Dye ink, textile pigment ink, and discharge liquid have each expiration dates. When stored several inks, use them in early order before the expiration dates.**
- **Use ink cartridge before expiration date. If using an expired ink, printing quality would be poor.**
- **No guarantee against problems and printing quality if using an expired ink.**

## 3. Printing procedure

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### 3. Printing procedure

To maintain high quality of printing and quality of printed image for a long term, pre-treatment and post-treatment to fabric are needed before/after printing process as well as steaming process.

#### 3-1. Printing process according to ink type

##### 3-1-1. Printing procedures with acid, reactive, and disperse dyes.

###### Pre treatment to fabric

Perform a pre-treatment on fabric for an inkjet.  
Refer to P.7 [3-2. Pre treatment to fabric].



###### Inkjet printing

Perform color print.  
Refer to P.8 [3-4. Inkjet printing].



###### Post treatment

Perform steaming and washing after printing.  
Refer to P.8 [3-4. Heat press].

##### 3-1-2. Printing procedures with textile pigment dye.

###### Pre treatment to fabric

N/A



###### Inkjet printing

Perform color print.  
Refer to P.17 [8-2. Inkjet printing].



###### Post treatment

Perform heat press after printing.  
Refer to P.17 [8-3. Post treatment].

#### 3-1-3. Printing procedures with discharge liquid.

Pre treatment to fabric

N/A



Inkjet printing

Perform discharge print.

Refer to P.18 [9-2. Inkjet printing].



Post treatment

Perform heat press after printing.

Refer to P.18 [9-3. Post treatment].

#### 3-2.Pre treatment to fabric

- (A) Make up pre treatment chemicals. Refer to the ink recipe (P.9 to 18) regarding compounding treatment chemicals.
- (B) Soak fabric in pre treatment chemicals, and wring it out up to 70 to 80% drawing rate with a roller.
- (C) Dry out fabric under 100°C temperature.



- All technical information quoted in this Ink-Use Guidance is only for reference. Adjust quantity of compounding or processing time according to fabric materials and thickness.
- When compounded treatment chemicals, wear the protective gloves which have a chemical resistance property. Perform smear test to make sure if the gloves have chemical resistance property. Without gloves, chemical damage may be caused on skin.
- Adjust the fabric-edge according to standard width while the fabric is drying. If the fabric-edge binds too strong, the fabric may be shrunk, or if the fabric-edge binds weakly, the fabric may be overstretched.
- Put the pre-treated fabric in a plastic bag and store it in cool and dark place to avoid moisture and direct sunlight. If a fabric turns into yellow, print the other part except of yellow part.

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### 3-3. Inkjet printing

Perform color print on the pre treated fabric.

Refer to the Operation Manual attached with the printer as for a printing procedure.

### 3-4. Heat press

#### (A) Steaming process

**Fix printed dyestuff on a fabric by heat.**

**All technical information quoted in this Ink-Use Guidance is only for reference. Adjust a steaming temperature and time according to your steamer.**

#### (B) Washing process

**Wash off unfixed dyestuff after steaming.**

**All technical information quoted this Ink-Use Guidance is only for reference.**

**Adjust the operation process and cleaning time.**

#### (C) Heat press process (Both Pigment ink and textile liquid)

**Fix a printed pigment on fabric by heat.**

**All technical information quoted in this Ink-Use Guidance is only for reference. Adjust a processing temperature and time according to your heat press machine.**



- Discharge is applicable only for reactive dyed fabrics (cotton). For different reactive dyestuff, confirm the process of discoloration before use.
- Please do not discharge for baby clothes as some of formaldehyde remains on a fabric after post treatment by heat press. Wash out any cloths at least one time to remove residual formaldehyde after post treatment by heat press.



## 4. Acid dye ink recipe (MIMAKI original recipe)

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### 4. Acid dye ink recipe (The original recipe produced by MIMAKI)

Ink model number : SPC-0355xx series

Printable fabric : Silk

The original recipe produced by MIMAKI is a process method for a qualified operator with pre treatment skills. An unqualified person should work in accordance with the qualified operator's instruction.

#### 4-1. Pre treatment

##### 4-1-1. Making up a pre treatment solvent

<< Composition of pre treatment solvent >>

Fine Gum SA-M ( DAI-ICHI KOGYO SEIYAKU Co., Ltd.)	30g
Nikka Silicon ATS-10 (NICCA CHEMICAL Co., Ltd.)	70g
Sodium tripolyphosphate	5g
Agent for disperse dyes (liquid type)	15g
Water	880g
Total	1000g

- (A) Melt 5g of sodium tripolyphosphate in 880g of water.
- (B) Melt 30g of fine gum SAM in water solution of sodium tripolyphosphate.
- (C) Leave water solution of sodium tripolyphosphate and Fine Gum SA-M, for 24hours, all day and night.
- (D) Add the Nikka Silicon ATS-10 in water solution of sodium tripolyphosphate and the Fine Gum SA-M. Then add oxidant inhibitor in.
- (E) Agitate water solution completely to make pre treatment solvent.

##### 4-1-2. Cloth treatment by pre treatment solvent

- (A) Soak fabric in pre treatment solvent and wring it out up to drawing rate 70 to 90% with a roller.
- (B) Dry out fabric under 100°C.

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## **4-2. Inkjet Printing**

Perform color print on the pre-treated fabric.

## **4-3. Post treatment**

### **4-3-1. Fix a printed dye on fabric by heat.**

**(A) Steam it at 100°C for 30 minutes.**

### **4-3-2. Wash off unfixed dyestuff by heat from a fabric.**

**(A) Rinse-1**

**Wash out a heat-treated fabric with water for 5 minutes.**

**(B) Sorping-1**

**Put 1 to 2g of soaping agent in 1 liter of hot water at 40 to 50°C. Soak fabric and watch it out for 3 to 5 minutes.**

**(C) Rinse-2**

**Wash out fabric with water for 5 minutes.**

**(D) Sorping-2**

**Put 1 to 2g of soaping agent in 1 liter of hot water at 40 to 50°C. Soak fabric and watch it out for 3 to 5 minutes.**

**(E) Rinse-3**

**Wash out fabric with water for 5 minutes.**

**(F) Drying**

**Dry out a laundered fabric.**

## 5. Reactive dye ink recipe

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### 5. Reactive dye ink recipe

Ink model number : SPC-0357xx series

Printable fabric : Cotton

#### 5-1. Pre treatment

##### 5-1-1. Making up a pre treatment solvent

<<Composition of pre treatment solvent>>

Alginate sodium (AIKUMA SENRYO Co., Ltd)	20g
Sun Flowren SN (NICCA CHEMICAL Co., Ltd)	50g
Sodium hexametaphosphate	10g
Urea	70g
Backing soda	30g
Agent for disperse dyes (liquid type)	15g
Water	805g
Total	1000g

- (A) Melt 70g of urea in 805g of water.
- (B) Melt 20g of alginate sodium in water solution of urea and leave it for 24 hours, all day and night.
- (C) Add 50g of Sun Flowren SN, 15g of agent for disperse dyes, 30g of baking soda in water solution of urea and alginate sodium. Then agitate it completely.
- (D) For ink strike-through printing, add 0.5g of a pre treatment solvent, Repitol G(DAI-ICHI KOGYO SEIYAKU Co., Ltd.).

##### 5-1-2. Cloth treatment by pre treatment solvent

- (A) Soak fabric in pre treatment solvent and wring it out up to drawing rate 70 to 90% with a roller.
- (B) Dry out fabric under 100°C.

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## **5-2. Inkjet Printing**

Perform color print on the pre-treated fabric.

## **5-3. Post treatment**

**5-3-1. Fix a printed dye on fabric by heat.**

**(A) Steam it at 100°C for 8 minutes.**

**5-3-2. Wash off unfixed dyestuff by heat from a fabric.**

**(A) Rinse-1**

**Wash out a heat-treated fabric with water for 10 minutes.**

**(B) Sorping-1**

**Put 1 to 2g of soaping agent in 1 liter of hot water at 70 to 80°C. Soak fabric and watch it out for 5 to 10 minutes.**

**(C) Rinse-2**

**Wash out fabric with water for 5 minutes.**

**(D) Sorping-2**

**Put 1 to 2g of soaping agent in 1 liter of hot water at 70 to 80°C. Soak fabric and watch it out for 3 to 5 minutes.**

**(E) Rinse-3**

**Wash out fabric with water for 5 minutes.**

**(F) Drying**

**Dry out a laundered fabric.**

## 6. Disperse dye ink recipe-1

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### 6. Disperse dye ink recipe-1

Ink model number : SPC-0356xx series

Printable fabric : Polyester

#### 6-1. Pre treatment

##### 6-1-1. Making up a pre treatment solvent

<<Composition of pre treatment solvent>>

Alginate sodium (AIKUMA SENRYO Co., Ltd) or Nicca gum M470	20 – 30g
Sun Flowren SN (NICCA CHEMICAL Co., Ltd)	50g
Nice Poal FE22	5g
NK gard NDN-7E	5g
Citric acid	2g
MS liquid	15g
EDTA-2Na	3g
Water	900g
Total	1000g

##### 6-1-2. Cloth treatment by pre treatment solvent

(A) Soak fabric in pre treatment solvent and wring it out up to drawing rate 70 to 90% with a roller.

(B) Dry out fabric under 100°C.

#### 6-2. Inkjet printing

Perform color print on the pre-treated fabric.

#### 6-3. Post treatment

##### 6-3-1. Fix a printed dye on fabric by heat.

(A) Steam it at high pressure 130°C for 30 minutes.



- Dispersing ink produced by MIMAKI is highly sublimation dyestuff. Therefore this is not suitable for HT steaming process (High Temperature steaming process).
- For pollution control of sublimation, use more than 2 pieces of interleaving papers in post treatment processing. Keep a proper distance between fabrics not to stick together.
- Before producing goods, be sure to perform a coloring test.

**6-3-2. Wash off unfixed dyestuff by heat from a fabric.**

**(A) Rinse-1**

**Wash out a heat-treated fabric with water for 5 minutes.**

**(B) Chemical washing**

**Wash fabrics in 1 liter of chemical cleaning solvent at approximately 80°C for 10 to 12 minutes.**

<<Reference of composition of chemical washing solvent>>

Sodium hydrosulfite	2g
Sodium hydroxide	2g
Soaping agent (Ex.: Laccorl ISF MEISEI SYOUKAI Co.,Ltd.)	1g
Water	995g
Total	1000g

**(C) Rinse with hot water**

**Wash fabrics in hot water at 50°C for about 5 minutes.**

**(D) Rinse-2**

**Wash out fabric with water for 5 minutes.**

**(E) Drying**

**Dry out a laundered fabric.**

## 7. Disperse dye ink recipe-2 (Diagum recipe)

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### 7. Disperse dye ink recipe-2 (Diagum recipe)

The diagum recipe is a process method for a qualified operator with pre treatment skills. An unqualified person should work in accordance with the qualified operator's instruction.

Adjust proper quantity of each solvent according to washing fabrics and a processing machine.

#### 7-1. Pre treatment

##### 7-1-1. Making up a pre treatment solvent

<<Reference of composition of chemical cleaning solvent>>

Water-based resin adhesive or alginate adhesive (Ex.: Diagum A-12 BF-Goodrich Co., Ltd.)	30g
Citric acid	2g
Water	968g
Total	1000g

- (A) Add water-based resin adhesive or 30g of alginate adhesive + 2g of citric acid in 968g of water. Then agitate it completely to make up a pre treatment solvent.

##### 7-1-2. Cloth treatment by pre treatment solvent

- (A) Soak fabric in pre treatment solvent and wring it out up to drawing rate 70 to 90% with a roller.
- (B) Dry out fabric under 100°C.

#### 7-2. Inkjet printing

Perform color print on the pre-treated fabric.

#### 7-3. Post treatment

##### 7-3-1. Fix a printed dye on fabric by heat.

- (A) Steam it at high pressure 130°C for 30 minutes.



- Dispersing ink produced by MIMAKI is highly sublimation dyestuff. Therefore this is not suitable for HT steaming process (High Temperature steaming process).
- For pollution control of sublimation, use more than 2 pieces of interleaving papers in post treatment processing. Keep a proper distance between fabrics not to stick together.
- Before producing goods, be sure to perform a coloring test.

**7-3-2. Wash off unfixed dyestuff by heat from a fabric.**

**(A) Rinse-1**

**Wash out a heat-treated fabric with water for 5 minutes.**

**(B) Chemical washing**

**Wash fabrics in 1 liter of chemical cleaning solvent at approximately 80°C for 10 to 12 minutes.**

<<Reference of composition of chemical washing solvent>>

Sodium hydrosulfite	2g
Sodium hydroxide	2g
Keralon OB (BASF Co., Ltd)	1g
Trilon-TA liquid (BASF Co., Ltd)	2g
Water	993g
Total	1000g

**(C) Rinse-2**

**Wash out fabric with water for 5 minutes.**

**(E) Neutralization**

**Melt 1g of acetic acid in 1000g of water. Soak fabric and wash it out for 2 to 3 minutes.**

**(F) Rinse-3**

**Wash out fabric with water for 5 minutes.**

**(G) Drying**

**Dry out a laundered fabric.**



## **8. Textile pigment ink recipe**

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### **8. Textile pigment ink recipe**

Ink model number : SPC-0350K/M/C, SPC-0435Y

Printable fabric : Cotton (T-shirt)

#### **8-1. Pre treatment**

Pre treatment process is not needed.

#### **8-2. Inkjet printing**

Perform color print on the pre-treated fabric.

#### **8-3. Post treatment**

**8-3-1. Fix printed dyestuff on fabric by heat. Processing method is different according to fabric materials.**

**(A) Cotton (T-shirt material)**

**Press with heat treatment at 160°C for 60 seconds.**

**(B) Cotton (broadcloth)**

**Press with heat treatment at 130°C for 40 seconds.**

**For different fabric materials, some fabrics get burned by heat and turned into yellow. Conduct a trial before use.**

**8-3-2. Rinse is not needed.**

## 9. Discharge liquid recipe

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### 9. Discharge liquid recipe

Ink model number : SPC-0409

Printed fabric : Cotton (T-shirt) for reactive dye ink



- Discharge is applicable only for reactive dyed fabrics (cotton). For different reactive dyestuff, confirm the process of discoloration before use.

#### 9-1. Pre treatment

Pre treatment process is not needed.

#### 9-2. Inkjet printing

Discharge print on the pre-treated fabric.

#### 9-3. Post treatment



- Please do not discharge printing for baby clothes as some of formaldehyde remains on a fabric after post treatment by heat press. Wash out any cloths at least one time to remove residual formaldehyde after post treatment by heat press.

**9-3-1. Add heat into a printed discharge liquid to bleach out color on fabric.**

(A) Press heat processing at 150 to 160°C for 60 seconds.

**9-3-2. Remove residual formaldehyde retaining on fabric.**

(A) Rinse

Wash out fabric with water for 5 minutes.

(B) Drying

Dry out a laundered fabric.

#### 9-4. Discharge Composition

Pre and post treatment are same as textile pigment ink recipe or discharge liquid recipe.



- To avoid discharge effect decline , it is recommended to do post treatment (heat press) within 5 minutes after printing.



**Mimaki**

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